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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/682,311 | 10/08/2003 | Karsten Laing | 027209-0901 | 7322 |

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| EXAMINER | |
|---|---|
| BERTHEAUD, PETER JOHN | |
| ART UNIT | PAPER NUMBER |
| 3746 | |

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/682,311 | LAING, KARSTEN | |
| | **Examiner** | **Art Unit** | |
| | Peter J. Bertheaud | 3746 | |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 October 2003*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-30* is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-30* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *08 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☒ All b)☐ Some * c)☐ None of:
1.☒ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/13/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract includes the phrase, “wherein the degassing device comprises” which is legal phraseology and should be avoided.

2. The disclosure is objected to because of the following informalities: The specification of the disclosure should be divided into specific sections with appropriate headings in order to make the application easier to read. These headings and the subject matter that should follow include:

a. Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
b. Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
c. Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
d. Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary

or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

e. Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

f. Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

Appropriate correction is required.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: “Degassing Device for a Circulation Pump”.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "vicinity" in claim 14, line 2 is a relative term which renders the claim indefinite. The term "vicinity" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Thus as used to qualify the proximity of the gas line to the sealing gap, this term renders the same indeterminate and the claim indefinite.

6. Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase “the internal region” in claim 29, line 2 is indefinite because it is unclear as to which “internal region” is being referred to, for example, the internal pump region, the internal valve region, or internal pipe region, etc.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5, 15-19, 21, 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Edwards (U.S. Patent No. 2,368,530).

Edwards discloses a rotary pump essentially as claimed, including for example, a rotatable impeller; and a degassing device, wherein the degassing device comprises a gas line (79) opening at a first end into an area on the impeller (24) and opening at a second end into an area with a lower pressure in relation to an interior pressure of the circulation pump or into a device generating underpressure see page 4, col. 1 lines 1-2. Edwards also discloses that the first end of the gas line opens into an area on the impeller where fluid eddies are able to form, see page 3, col.1, lines 33-40, and that the first end also opens into an area on the impeller where gas is able to accumulate (18), see page 3, col.1, lines 58-65. Edwards further discloses that the gas line comprises a pipe that is aligned either essentially parallel or at an angle to the axis of rotation of the impeller at least in one section (71,79). Finally, Edwards discloses that the first end of the gas line opens up into a cavity on the impeller (18).

The reference thus reads on the claims.

### *Claim Rejections - 35 USC § 103*

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 6, 7, 8, 10, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (U.S. Patent No. 2,368,530) as applied above, in view of Savage (U.S. Patent No. 3,970,555).

Edwards as applied above discloses all the limitations substansially as claimed except for the gas line pipe having a valve, which can be closed either automatically or manually, arranged at its second end.

Savage teaches a gas removal apparatus defining a pipe (23) for removing gases from deep-bed filters generated during the denitrification of treated waste-water as well as a valve (25) arranged at its second end. Savage further teaches that the valve can be closed either automatically or manually.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the gas line pipe of Edwards by adding the valve, as taught by Savage, in order to vent the gas at specific time intervals, possibly without a person having to perform the task themselves.

11. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the above patents in reference to claim 10 in view of Herron (U.S. Patent No. 4,163,456).

The references as applied to claim 10 disclose all the limitations substantially as claimed except for the valve being a float arranged in a receiving chamber of the gas line.

Herron teaches a valve assembly defining a float arranged in a receiving chamber. Herron further teaches that attaching this valve to the end of a gas line would be advantageous because the gas can vent whenever necessary on its own.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the gas line pipe and valve assembly of Edwards and Savage by using the float valve, as taught by Herron, in order to vent the gas automatically at specific time intervals without a person having to perform the task themselves.

12. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (U.S. Patent No. 2,368,530) as applied above, in view of Savage (U.S. Patent No. 3,970,555) and Herron (U.S. Patent No. 4,163,456).

Edwards, as applied above, discloses all the limitations substantially as claimed except for the valve being a float arranged in a receiving chamber of the gas line.

Savage teaches a gas removal apparatus defining a pipe (23) for removing gases from deep-bed filters generated during the denitrification of treated waste-water as well as a valve (25) arranged at its second end. Savage further teaches that the valve can be closed either automatically or manually.

Herron teaches a valve assembly defining a float arranged in a receiving chamber. Herron further teaches that attaching this valve to the end of a gas line would be advantageous because the gas can vent whenever necessary on its own.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the gas line pipe of Edwards with the valve assembly, as taught by Savage, involving the float valve, as taught by Herron, in order to vent the gas automatically at specific time intervals without a person having to perform the task themselves.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the above patents in reference to claim 7 in view of Blomquist (U.S. Patent No. 4,905,863).

The references as applied to claim 7 above disclose all the limitations substantially as claimed except for a screw provided for closing the gas line.

Blomquist teaches a vent assembly defining a screw (4) and a pair of barbs (25) on the end of a leg (26). Blomquist further teaches that using a screw to close a container holding gas would be advantageous because the amount of gas that escapes over time could be controlled by how far the valve is screwed in.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the gas line pipe and valve assembly of Edwards and Savage by using the screw vent assembly, as taught by Blomquist, in order to selectively vent the gas, either by selectively choosing times at which to vent the gas or by deciding on an amount to continuously escape.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (U.S. Patent No. 2,368,530) as applied to claim 1, in view of Edwards (U.S. Patent No. 2,422,956).

Edwards (U.S. Patent No. 2,368,530) as applied to claim 1, discloses all the limitations substantially as claimed except for the pump to having a sealing gap between the intake area and the impeller.

Edwards (U.S. Patent No. 2,422,956) teaches a rotary pump defining a rotatable impeller and a degassing device. Edwards further teaches that a sealing gap (31) between the intake area and the impeller would be advantageous in order to properly distribute the fluid to the next stage of the pump without losses.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the gas line pipe and valve assembly of Edwards (U.S. Patent No. 2,368,530) by using the sealing gap (31), as taught by Edwards, (U.S. Patent No.

2,422,956) in order to properly distribute the fluid to the next stage of the pump without losses.

15. Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (U.S. Patent No. 2,368,530) as applied to claim 1, in view of Laing (U.S. Patent No. 4,834,628).

Edwards (U.S. Patent No. 2,368,530) as applied to claim 1, discloses all the limitations substantially as claimed except for the impeller arranged on a rotor mounted in a spherical bearing.

Laing teaches a pump assembly defining intake and an outtake area, along with a rotatable rotor-impeller unit driven by a shaft connected to a motor. Laing further teaches that this rotor-impeller unit being placed in a spherical bearing (3,4,5) would be advantageous because spherical bearings are less likely to block or seize.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the impeller assembly of Edwards by using the spherical bearing, as taught by Laing (3,4,5), in order to decrease the amount of blocking or seizing seen in rotary devices.

16. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (U.S. Patent No. 2,368,530) as applied to claim 1, in view of Hickok (U.S. Patent No. 5,449,454).

Edwards as applied to claim 1, discloses all the limitations substantially as claimed except for the gas line pipe being guided through an intake area of the pump.

Hickok teaches a gas-expelling device defining a pump apparatus (40) including an impeller and housing (46) and a tube (170). Hickok further teaches that the tube being guided through an intake area would be advantageous because by having mutual corridor walls shared by different streams of fluid flow on either side, size and cost of the device can be decreased.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the gas line pipe of Edwards by altering the gas line to be guided through an intake area, as taught by Hickok, in order for both lines of fluid flow to share the same corridor, at least for a short length, in order decrease the size and cost of the device.

17. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (U.S. Patent No. 2,368,530) as applied in claim 1, in view of Ruhl (U.S. Patent No. 4,205,947).

Edwards as applied to claim 1, discloses all the limitations substantially as claimed except for the first end of the gas line facing a side of the impeller allocated to an intake side of the pump.

Ruhl teaches a fuel pump defining a gas ventilation pipe (58) as well as an intake (6) and an impeller (30). Ruhl further teaches that the first end of the ventilation pipe facing a side of the impeller allocated to the fuel intake side of the pump would be advantageous because the fuel pump can be placed in a lined series of devices with no protrusions on either side.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the gas line pipe of Edwards by altering the position of the gas line pipe to face a side of the impeller allocated to the fuel intake side of the pump, as taught by Ruhl, in order to keep the sides of the pump free of protrusions so it can be placed in tight quarters.

### *Conclusion*

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are noted in the attached form 892.

19. Applicant is duly reminded that a complete response must satisfy the requirements of 37 C.F. R. 1.111, including: "The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. A general allegation that the claims "define a patentable invention" without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section. Moreover, "The prompt development of a clear Issue requires that the replies of the applicant meet the objections to and rejections of the claims." Applicant should also specifically point out the support for any amendments made to the disclosure. See MPEP 2163.06 II(A), MPEP 2163.06 and MPEP 714.02. The "disclosure" includes the claims, the specification and the drawings.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is 571-272-3476. The examiner can normally be reached on M-F 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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